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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,648	01/05/2001	Bodo Furchheim	7054-101XX	1304
62836 7590 03/22/2011 BERLINER & ASSOCIATES 555 WEST FIFTH STREET 31ST FLOOR LOS ANGELES, CA 90013				
EXAMINER				
DIAZ, THOMAS C				
ART UNIT		PAPER NUMBER		
3656				
MAIL DATE		DELIVERY MODE		
03/22/2011		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

09/674,648

**Applicant(s)**

FURCHHEIM ET AL.

**Examiner**

THOMAS DIAZ

**Art Unit**

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GA-06)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/22/2010 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1, 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, claim 1 recites "each of the bearer rings having an outer surface and an inner surface and the necessary hardness, strength and wear resistance,". The phrase " necessary hardness, strength and wear resistance " in claim 1 is a relative term which renders the claim indefinite. The term "necessary" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of

the scope of the invention. What is the necessary hardness? How would one ascertain what bearer ring would read on the claim without further explanation as to what the necessary hardness, strength and wear resistance would be?

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1 and 3-5, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan (USP 4382390).**

Mannesmann discloses a method for the manufacture of a camshaft from a tube (1), the camshaft having bearer rings (2) attached thereto, the method comprising the following steps; placing bearer rings, produced in a separate method and in correspondence with prospective locations of hollow cams on the cam shaft (see figures), in a high internal pressure forming tool (the assembly is manufactured in a die in which the tube is or could be hydraulically widened, col.2, lines 26-27) together with the tube to be formed, whereby the bearer rings are attached by expansion of the tube in a frictional and interlocking manner (fig.1, tube is hydraulically expanded with fluid pressure), each of the bearer rings having outer surface and an inner surface (see fig.1), and the necessary hardness, strength, and wear resistance and wherein the

bearer rings possess the same wall thickness (see fig.2, they have the same thickness); subjecting the tube to axial forces and a medium under high internal pressure (the tube would undergo axial forces from the die and high internal pressure via the hydraulic fluid used to expand it within the die) so that the tube expands to form said cam regions wherein the diameter of the tube in said region are greater than the diameter of the tube at the non cam regions (figures 1-2, clearly the tube is greater in the cam regions than the non-cam regions), whereby the shaft has all cams in form and in position on a single piece (see fig.1; everything is assembled to form a single piece).

Jordan is silent to in a first method step prior to the high internal pressure forming, regions of the tube which are clear of the regions in which the cams are seated are kneaded or upset such that said tube regions which are clear of the cam regions are increased in thickness and/or stretched so that bearing faces, drive and/or control elements are formed from the tube itself.

As to the matter of the end regions being upset by kneading, The Examiner takes Official Notice the fact that a kneading process or round kneading in metal forming art is well known practice. It would been obvious to one having ordinary skill in the art at the time the invention was made to perform the tube ends and regions outside of the cam regions by kneading/upsetting resulting in regions clear of the cam regions having an increased and/or stretched form so that at bearing faces are formed from the tube itself. In fact the placement of the dies themselves would cause such a formation. To change shape or size of any metal element by kneading would have been an obvious process choice.

Additionally, it is noted as evidentiary reference Harle (USP 5024294) discloses the concept of performing the tube with forging (upsetting) and round kneading in camshafts.

Regarding claim 3, Jordan discloses that between the cam shaft ends in a step prior to internal high pressure forming bearing faces and the eventual region where the cams are to be seated, are produced by round kneading and by reducing the diameter in this part to the desired size.

As to the matter of the end regions being upset by kneading, The Examiner takes Official Notice the fact that a kneading process or round kneading in metal forming art is well known practice. To change shape or size of any metal element by kneading would have been an obvious process choice.

Additionally, it is noted as evidentiary reference Harle (USP 5024294) discloses the concept of performing the tube with forging (upsetting) and round kneading in camshafts.

Regarding claim 4, Jordan discloses characterized in that bearing faces are produced between the cams by internal high pressure forming by expanding the tube (see fig.1).

Regarding claim 5, Jordan discloses the bearer rings are hardened in a known manner prior to being placed in the internal high pressure forming tool (the bearer rings are preformed and therefore hardened prior to being attached to the tube).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 3-5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please note Swars (5868042) which also shows different functional elements 7 and 10 formed from the shaft itself.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS DIAZ whose telephone number is (571)270-5461. The examiner can normally be reached on Monday-Friday 7:30am to 4:00pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571)272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas Diaz/  
Examiner, Art Unit 3656

/Richard WL Ridley/  
Supervisory Patent Examiner, Art Unit 3656